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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,032	04/14/2004	Chunxin Ji	8540G-000206	6024

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EXAMINER

JOLLEY, KIRSTEN

ART UNIT PAPER NUMBER

1762

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/824,032

Applicant(s)

JI ET AL.

Examiner

Kirsten C. Jolley

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7/31/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-18 is/are allowed.
- 6) ☒ Claim(s) 1,4-8,19,20,22-27,33,34 and 36 is/are rejected.
- 7) ☒ Claim(s) 2,3,21,28-32 and 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/9/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments/Amendments*

1. The 35 USC 112, 1<sup>st</sup> paragraph rejections have been withdrawn in response to Applicant's convincing arguments filed July 31, 2006.
2. The rejections of claims 31-35 over Mathias et al., Cisar et al., and Tetzlaff et al. have been withdrawn in response to Applicant's amendments to the claims.
3. Applicant's arguments filed July 31, 2006 regarding the 35 USC 102(b) and 103(a) rejections have been fully considered but they are not persuasive.

Applicant argues that Hedge does not disclose or suggest the step of contacting a wet porous sheet material with a pattern member while the sheet material is still wet. Applicant states that the reference clearly teaches to dry the membrane and then, once the dry porous membrane has been formed, applying a removable mask to the porous membrane. The Examiner notes that Hedge teaches providing a dry porous membrane, applying a removable mask, and then applying a solution of a hydrophobic polymer to the masked hydrophilic porous membrane (col. 12, lines 47-59). While it is acknowledged that Hedge teaches applying the solution of hydrophobic polymer *after* the mask is already present on the substrate, this still reads on Applicant's claimed step of "contacting the wet porous sheet material with a pattern member" because the sheet having solution thereon (i.e., while it is wet) contacts the pattern member. Additionally it is noted that independent claim 20 does not require that the membrane/sheet is wet when it is contacted with the pattern member.

If Applicant's claims are amended to require that the *entire* porous sheet material is wet with a polymer composition (including both areas covered and not covered by the mask), and then the wet porous sheet is contacted with a pattern member, then the claims would be allowable over the prior art of Hedge et al. which only supplies solution on areas not protected by the mask. Alternatively, if Applicant's claims are amended to require that evaporating causes migration/movement of the polymer across the porous substrate to the areas corresponding to openings of the pattern member, which is the mechanism by which Applicant's invention works, then the claims would be allowable over the prior art.

Regarding the rejection of claim 19 over Mathias et al., Applicant argues that the diffusion layer of the Mathias reference is performed by pulling dust through a substrate, and deposition of the polymer by precipitation from a solution yields a different structure than capture of ground dust particles in the fibers of the substrate. This is not convincing because whether a solid hydrophobic or hydrophilic material is used to create hydrophobic or hydrophilic regions instead of a liquid solution that is later dried to a solid state, it is the Examiner's position that similar products comprising regions of both hydrophilic and hydrophobic areas will be achieved.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 33-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 is vague and indefinite because the claim depends from itself, therefore it is not clear what is required by the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 4-6, 20, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Hedge et al. (US 6,395,325).

The claim rejections are maintained for the same reasons set forth in the prior Office action as well as for the reasons discussed above in section 3.

***Claim Rejections - 35 USC § 102/103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 19 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mathias et al. (US 2004/0137311).

The claim rejection is maintained for the same reasons set forth in the prior Office action as well as for the reasons discussed above in section 3.

#### ***Claim Rejections - 35 USC § 103***

10. Claims 7-8 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedge et al.

The claim rejections are maintained for the same reasons set forth in the prior Office action as well as for the reasons discussed above in section 3.

#### ***Allowable Subject Matter***

11. Claims 9-18 are allowed for the reasons discussed in the prior Office action.
12. Claims 2-3, 21, 28-32, and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims for the reasons discussed in the prior Office action.
13. Claims 33-34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Kirsten C Jolley  
Primary Examiner  
Art Unit 1762

kcj